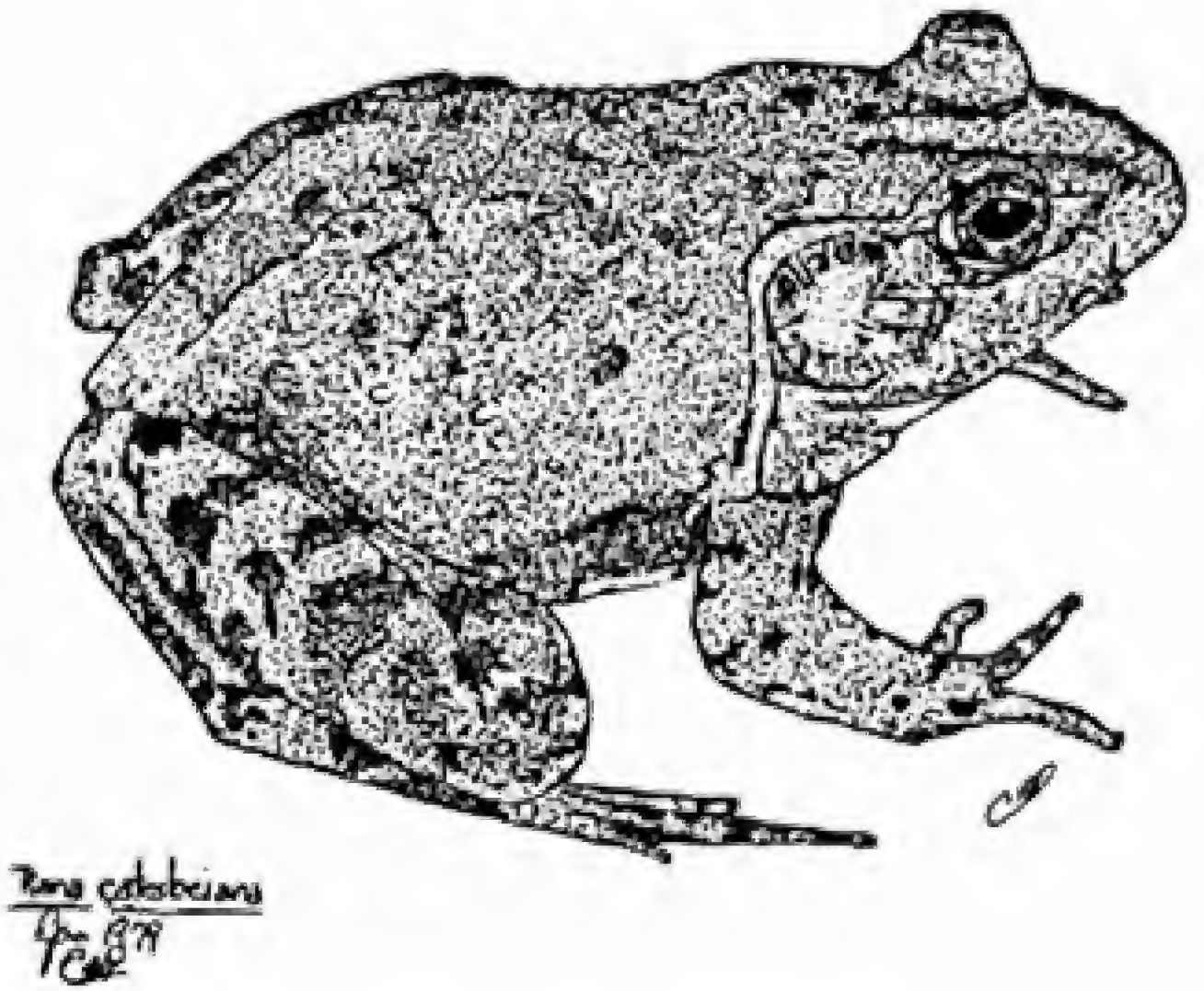
CATESBEIANA



BULLETIN OF THE VIRGINIA HERPETOLOGICAL SOCIETY

ISSN 0892-0761

Volume 23 2003 Number 1

BULLETIN INFORMATION

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The principal function of *Catesbeiana* is to publish observations and original research about Virginia herpetology. Rarely will articles be reprinted in *Catesbeiana* after they have been published elsewhere. All correspondence relative to the suitability of manuscripts or other editorial considerations should be directed to Dr. Steven M. Roble, Editor, *Catesbeiana*, Virginia Department of Conservation and Recreation, Division of Natural Heritage, 217 Governor Street, Richmond, VA 23219.

Major Papers

Manuscripts being submitted for publication should be typewritten (double spaced) on good quality 8½ by 11 inch paper, with adequate margins. Consult the style of articles in this issue for additional information, including the appropriate format for literature citations. The metric system should be used for reporting all types of measurement data. Computer diskettes (Word or WordPerfect format) are desired for longer papers. Submissions concerning the herpetofauna of selected areas, such as a state park or county, should be prepared in article rather than field note format. Articles will be refereed by the editor and at least one other qualified reviewer. All changes must be approved by the author before publication; therefore, manuscripts must be received by the editor before the first of March and September to be considered for publication in the spring or fall issue, respectively, of *Catesbeiana*. Reprints of articles are not available to authors; however, authors may reprint articles themselves to meet professional needs.

(Editorial policy continued on inside back cover)

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Bulletin of the Virginia Herpetological Society

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Greensville County, Virginia
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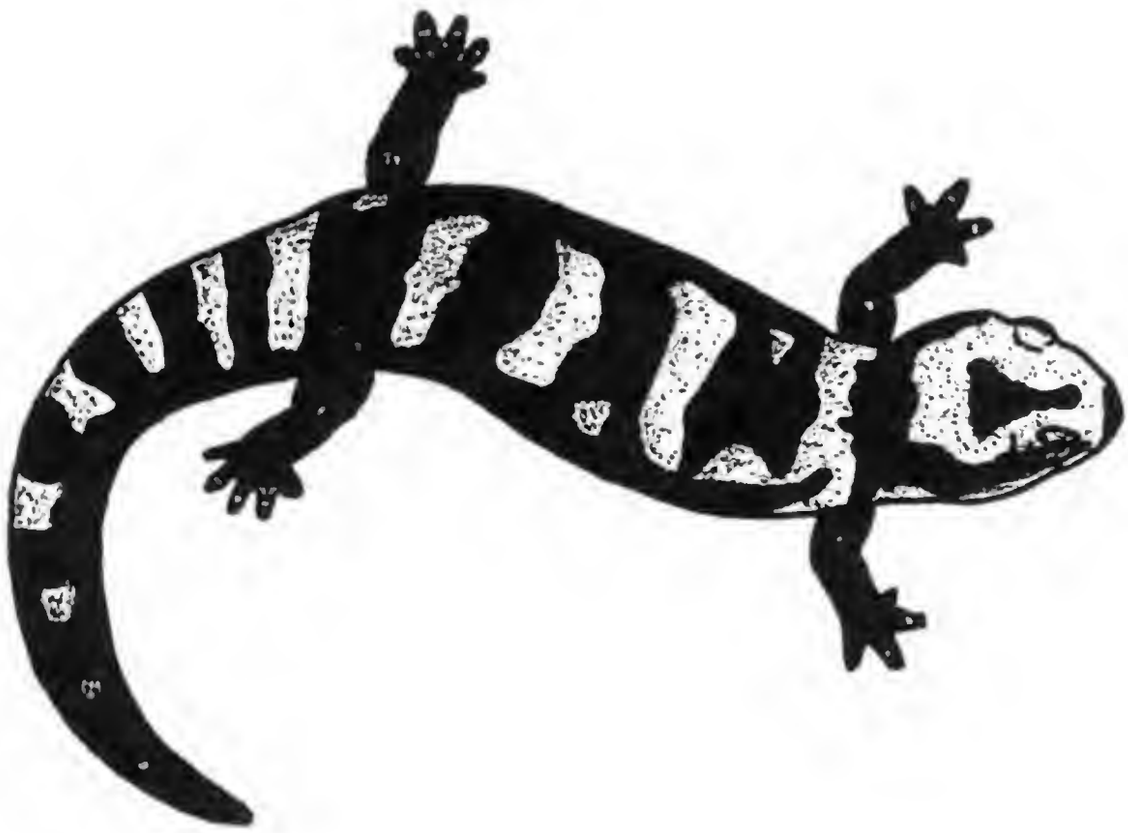

Marbled salamander (*Ambystoma opacum*)
Drawing by Jason Gibson

Biological Diversity of Reptiles and Amphibians in Big Survey Wildlife Management Area

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Introduction

Big Survey Wildlife Management Area (WMA) is one of Virginia's newest management areas owned and operated by the Virginia Department of Game and Inland Fisheries (VDGIF). It was officially dedicated on 18 October 2001. This 3,359 ha (8,300 acre) tract of land is located in Wythe County 2 km south of the town of Wytheville and is bordered to the north by Interstate 81. It is comprised of two tracts of land, which include portions of Sand Mountain, Lick Mountain, Stuart Mountain, and Swecker Mountain. Crystal Springs Watershed, a 749 ha (1,852 acre) parcel of land owned by the town of Wytheville, is located in the center of the WMA. Big Survey WMA is in the Ridge and Valley physiographic province and is composed mostly of sandstone and quartzite, which form well-drained, dry soils. Elevation reaches 1,134 m (3,720 ft) on Sand Mountain. Five small streams drain the property to the New River. A diversity of aquatic habitats exists on this property including a high elevation vernal pool, a man-made pond, headwaters of five streams, springs, and steep ravines. There are many terrestrial habitats as well including upland oak-hickory forest, open land with many drought resistant native grasses, rhododendron heaths, and sandstone outcrops.

Limited surveys have been conducted in this area by the VDGIF and the Virginia Department of Conservation and Recreation (Division of Natural Heritage)(S. M. Roble, pers. comm.). No comprehensive reptile and amphibian surveys have been conducted on this property. The Virginia Herpetological Society (VHS) annually conducts a survey in some part of

Virginia. This site was chosen because of its diversity of habitats, the virtual lack of previous surveys, and its potential to yield new county records. Below is a report of the 2002 spring survey.

Study Sites

Personnel from VDGIF selected five sites and one man-made trout pond for members of the VHS to survey. A listing and description of each site follows.

Site A: Dungeon Branch (starting at Trivett property)
The portion of Dungeon Branch surveyed consists of a small stream (≤1 meter wide and 1 m deep). A gentle topographic slope creates rapidly flowing water interrupted at times by deeper slower moving pools. One portion of the stream consists of a pool approximately 30 m wide. This site contains many varied aquatic habitats.

Site B: Stuart Mountain
The Stuart Mountain site has a typical deciduous complement with a fair amount of hemlock interspersed throughout. One side of this mountain consists of a sloping valley bisected by a meandering stream; the other side of the mountain is steep and rugged with a faster flowing stream. Many mosses and ferns are found in the moister areas of this site.

Site C: Garden of the Gods
Garden of the Gods survey site consists of a ridge of large limestone outcrops and boulders bisected by a powerline right-of-way. Nearby are a few streams with a wet woodland floor.

Site D: Big Survey Trout Pond
A man-made pond located on the property of Big Walker Game and Fish Club.

Site E: Venrick Run
This site consists of Venrick Run, rhododendron riparian heath, a dammed pool, and a powerline right-of-way paralleling portions of the stream.

Site F: Lick Mountain SE side, Headwaters of Dungeon Branch
Two distinct habitats are found at this site. One is a high elevation (914 m; 3,000 ft) vernal pool that was completely full (1 m deep) and surrounded by an oak-hickory forest. The second site consisted of Mill Creek and the headwaters of Dungeon Branch. Both of these streams flow through a mature oak-hickory forest. Many decayed logs, large chunks of bark, and rock outcrops were found at this site.

Materials and Methods

Sampling was conducted on 18-19 May 2002. Four teams of 4-8 people sampled sites selected by Betsy Stinson, Bill Bassinger, and Mike Mabe (VDGIF personnel). Sites were selected to cover a wide range of habitats and land area within the WMA. Terrestrial animals were sampled by overturning rocks, cobble, logs, leaf litter, and bark. Male anurans were detected by listening for vocalizations. Aquatic animals were found by overturning rocks in streams and by dipnetting. Visual identifications were made in both aquatic and terrestrial habitats. Each specimen found was recorded, photographed (if needed), observed for unusual behavior, and inspected for mutations. Microhabitat was documented for each encounter. Larval specimens were taken to the lab and reared if identification was not possible in the field.

Results

During the survey 17 species of amphibians (12 salamanders, 5 anurans) and 6 species of reptiles (2 turtles, 1 lizard, 3 snakes) were observed. Five species that were not recorded from Wythe County by Tobey (1985), Mitchell (1994), or Mitchell and Reay (1999) are denoted by an asterisk below. One species, *Ambystoma opacum* (marbled salamander), represents a notable western range extension, the closest vouchered record being documented from western Pittsylvania County (Mitchell and Reay 1999). An annotated checklist of the species found during this survey follows. Letters in brackets refer to sampling locations listed above and shown on the map (Fig. 1). Table 1 summarizes the species found at each location.

Annotated Checklist

Amphibians

*1. *Ambystoma jeffersonianum* (Jefferson salamander) - [F]

Two larvae were captured in a vernal pond on Lick Mountain. These specimens were reared in a laboratory to allow for the development of adult color patterns. Tobey (1985) plotted one locality in Wythe County for this species but Mitchell and Reay (1999) did not record it in this county. A specimen has been deposited in the Virginia Museum of Natural History.

2. *Ambystoma maculatum* (Spotted salamander) – [A, F]

Many larvae were dipnetted in vernal pools.

*3. *Ambystoma opacum* (Marbled salamander) – [F]

One larva captured in a vernal pool on Lick Mountain was reared in the laboratory and found to have the *Ambystoma opacum* color pattern. This specimen has been deposited in the Virginia Museum of Natural History and represents a new county record. The lack of previous records of this species from this area is most likely due to limited sampling.

4. *Desmognathus fuscus* (Northern dusky salamander) – [A, E]

A total of ten adult specimens were found under rocks along streams. One salamander was observed eating a worm.

5. *Desmognathus monticola* (Seal salamander) – [A, E, F]

Nineteen adult and six juvenile seal salamanders were found during this survey. They were found along streams under rock cobble.

6. *Desmognathus ochrophaeus* (Alleghany mountain dusky salamander) – [A, B, F]
Three adults and four juveniles were found along streams under rocks and logs.

7. *Eurycea cirrigera* (Southern two-lined salamander) – [A, E]

A total of six adult two-lined salamanders were found along streamside habitats under rocks and logs.

8. *Notophthalmus viridescens viridescens* (Red-spotted newt) – [D, F]

One newt was dipnetted in a vernal pool and another was dipnetted in a pond.

9. *Plethodon cinereus* (Red-backed salamander) – [A, B, E, F]

A total of thirty red-backed salamanders were collected during our survey. They were found under bark, logs, rocks, and leaf litter. One adult was missing its tail. Another adult was observed with eggs.

10. *Plethodon cylindraceus* (White-spotted slimy salamander) – [A, B, C, E, F]

This species was found in the most locations of any salamander species. A total of eleven adults and two juveniles were found under logs, rocks, and in rock crevices.

11. *Plethodon richmondi* (Ravine salamander) – [F]

Four adults were found under logs and one adult was found under a rock. All sites were adjacent to a small stream.

12. *Pseudotriton ruber* (Red salamander) – [E]

One red salamander was found under a rock on the edge of a powerline right-of-way. This site was adjacent to a spring and a stream.

13. *Bufo americanus americanus* (American toad) – [A, C, E]

Two adult toads were found under rocks and some tadpoles were found dead in an old mine pond at site A.

*14. *Pseudacris crucifer crucifer* (Northern spring peeper) – [A, B, D]

Three spring peepers were heard calling during this survey.

15. *Rana clamitans melanota* (Northern green frog) – [A]

One male was observed calling beside a stream.

16. *Rana palustris* (Pickerel frog) – [D]

Several adults were found along the edge of a trout pond.

*17. *Rana sylvatica* (Wood frog) – [A, F]

Many tadpoles were dipnetted in a vernal pool at site F. A few specimens were collected and reared to metamorphosis. One adult measuring 70 mm SVL was found beside a stream.

Reptiles

*18. *Chelydra serpentina serpentina* (Eastern snapping turtle) – [A, F]

A total of three snapping turtles, two adults and one juvenile (33 mm carapace length), were found. Microhabitats included a pool and swampy area.

19. *Terrapene carolina carolina* (Eastern box turtle) – [A]

One live box turtle (140 mm plastron length) and one dried shell were found.

20. *Sceloporus undulatus hyacinthinus* (Northern fence lizard) – [C]

Fence lizards were the only lizards found during this survey. One gravid female was found under a log.

21. *Carphophis amoenus amoenus* (Eastern wormsnake) – [C]

Two adults and one juvenile were found under rocks.

22. *Diadophis punctatus edwardsii* (Northern ring-necked snake) – [A, B, C, F]

This was the most abundant snake found during the survey. Ten adults were located under logs and tree bark. Three were measured and found to have total lengths of 200 mm, 260 mm, and 260 mm.

23. *Nerodia sipedon sipedon* (Northern watersnake) – [E]

One juvenile watersnake was found under a log beside a stream.

Discussion

The first day of the survey was extremely cold (high temperature 10° C), cloudy, and rainy. The second day of the survey was warmer (high temperature 15° C) without rain, and sunny towards the end of the survey time period. These weather conditions are probably responsible for the few observations of reptiles. Of three turtles reported in Mitchell (1994) and Mitchell and Reay (1999) for the region, we found one. One other species, *Chelydra serpentina*, was not previously reported for Wythe County. Only one lizard (*Sceloporus undulatus*) has been vouchered for Wythe County. This species was found, but only one specimen was observed in two days of survey effort. *Eumeces fasciatus* and *Eumeces laticeps* are found in nearby counties and could possibly be added to the herpetofauna of Big Survey in future surveys with warmer weather. It is even possible that *Cnemidophorus sexlineatus*, which prefers sandy soils, could inhabit this WMA. Snakes were poorly represented in our survey. Of eight species recorded in the region by Mitchell and Reay (1999), we only found three. One other species, *Thamnophis sirtalis*, was observed on 23 July 1998 along Mill Creek (between survey areas A and C) by S. M. Roble and C. S. Hobson (S. M. Roble, pers. comm.). Linzey and Clifford (1981), Tobey (1985), and Mitchell (1994) recorded *Agkistrodon contortrix* and *Crotalus horridus* from Wythe County, but neither is reported by Mitchell and Reay (1999). Park managers have observed

Crotalus horridus on WMA roads. Future surveys may discover a population of *Pituophis melanoleucus* living in the unique habitat found in the Big Survey property.

The diversity of salamanders was well represented during this survey. Mitchell and Reay (1999) recorded 15 species of salamanders from Wythe County, 10 of which were found during our survey. Two others, (*Ambystoma jeffersonianum* and *Ambystoma opacum)* documented on the WMA were not reported for the county by Mitchell and Reay (1999), but Tobey (1985) did report *A. jeffersonianum. Ambystoma opacum* was reported by Tobey (1985) from Montgomery County, one county to the northeast of Wythe County, but Mitchell and Reay (1999) do not include this record. This salamander is most likely found in other parts of this region and further intensive surveys of vernal pools should expand its known range. *Notophthalmus viridescens*, which was found in this survey, was not reported from Wythe County by Mitchell and Reay (1999) but is documented in VDGIF (2002). The observation of *Desmognathus ochrophaeus* in Big Survey WMA extends its known range to the southeast.

Five species of anurans were documented in the region by Mitchell and Reay (1999). Our study also found five species, but two of these, *Pseudacris crucifer* and *Rana sylvatica*, were not recorded by Mitchell and Reay (1999). Both of these records help fill in distributional gaps. Although our study did not find *Pseudacris feriarum*, Tobey (1985) plotted two localities for this anuran in Wythe County. This species is not represented in Mitchell and Reay (1999) or VDGIF (2002).

The two-day survey conducted by the VHS is not adequate to fully document the herpetofauna that exists in Big Survey WMA. Future surveys could be conducted in the early spring and early summer to increase observations of early breeding species of amphibians and thermophilic reptiles. More areas, including more varied microhabitats, can also be included in future survey efforts.

The uniqueness and size of Big Survey WMA make it an important habitat to manage and preserve. It has a wide variety of herpetofauna, mammals, and is an important breeding ground for woodland birds and

neotropical migrants. By creating this WMA, a large portion of four mountains is being protected from active mining and logging. Managers of this land will need to identify the best practices that will allow for the habitats to remain in perpetuity. Logging management, control of ATVs, and documenting the biodiversity of this WMA seem to be the most pressing issues for managers in the near future.

Acknowledgments

The following VHS members and volunteers participated in this survey: Bill Bassinger, Mitch Bowling, David Dawson, David L. Dawson, Noah Dawson, Jason Gibson, Robert Harris, Mike Mabe, Shelly Miller, Mike Pinder, Jennifer Pullen, John Rafter, Paul Sattler, Betsy Stinson, Gordon Wilson, Brooke Wilson, Mallory Wilson, Dane Wilson, Greg Woodie, Barry Family, Tom Watson, Tom Akre, Mr. Robison, Mr. Blackburn, Kathy and McKeever Henley, John White, Jennifer White, Amy White, and Charise White. We apologize for any name inadvertently left off this list. We would like to thank Bill Bassinger, Mike Mabe, and Betsy Stinson for their assistance in selecting survey sites, contacting landowners, and providing useful historical and management information. Special thanks to the landowners that allowed the VHS to park on their land and access the WMA via their property and to Big Walker Game and Fish Club for the use of their facilites. We would also like to thank Steve Roble, Jared Peatman, and Kathy Renyer for reviewing earlier drafts of this manuscript.

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Figure 1. Map of study sites in Big Survey Wildlife Management Area.

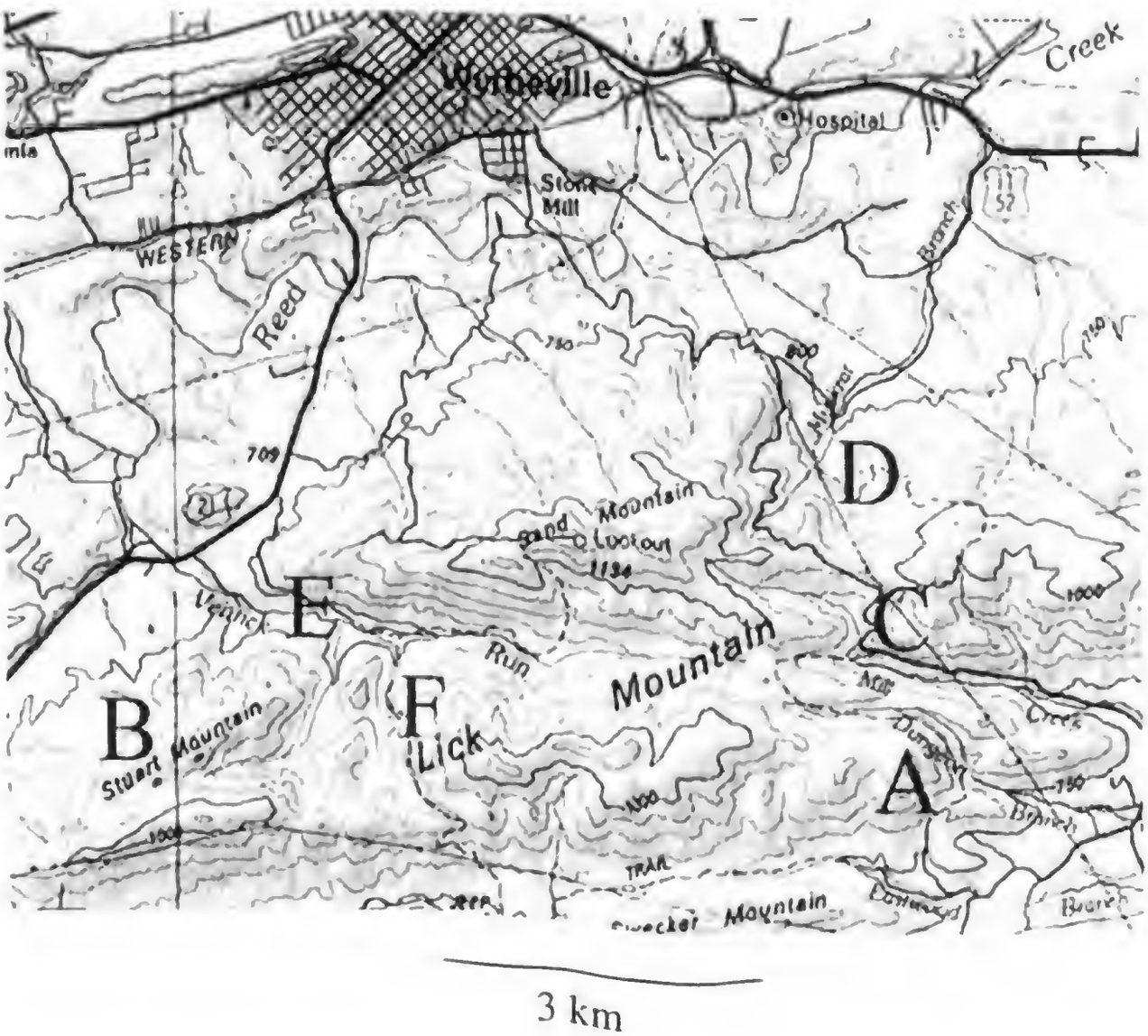

Table 1. Summary of the herpetofauna observed during the 2002 VHS Spring Survey. A = Dungeon Branch starting at Trivett property; B = Stuart Mountain; C = Garden of the Gods; D = Big Survey trout pond; E = Venrick Run; F = Lick Mountain SE side, headwaters of Dungeon Branch; R&H = observations made by Steve Roble and Chris Hobson (Virginia Department of Conservation and Recreation, Division of Natural Heritage) on 22-23 July 1998. X = species observed.

Species	A	B	C	D	E	F	R&H
Amphibians							
Ambystoma jeffersonianum						x	
Ambystoma maculatum	x					x	
Ambystoma opacum						x	
Desmognathus fuscus	x				x		x
Desmognathus monticola	x				x	x	
Desmognathus ochrophaeus	x	x				x	
Eurycea cirrigera	x				x		
Notophthalmus v. viridescens				x		x	
Plethodon cinereus	x	x			x	x	
Plethodon cylindraceus	x	x	x		x	x	
Plethodon richmondi						x	
Pseudotriton ruber					x		x
Bufo a. americanus	x		x		x		x
Pseudacris c. crucifer	x	x		x			
Rana clamitans melanota	x						
Rana palustris				x			x
Rana sylvatica	x					x	x
Reptiles							
Chelydra s. serpentina	x					x	
Terrapene c. carolina	x						x
Sceloporus u. hyacinthinus			x				x
Carphophis a. amoenus			x				
Diadophis punctatus edwardsii	x	x	x			x	
Nerodia s. sipedon					x		
Thamnophis s. sirtalis							x

Field Notes

***Chrysemys picta picta* (Eastern Painted Turtle).** VA: Accomack Co., Onancock, 24365 Nancock Gardens Rd., ca. 0.85 km N jct. Co. Rt. 638 and Nancock Gardens Rd. 11 June 2001 and 16 April 2002. Walter E. Carlson, Timothy R. Brophy, and Timothy W. Brophy.

According to Mitchell (1999. Checklist and keys to the amphibians and reptiles of Virginia's Eastern Shore. Catesbeiana 19: 3-18), all herpetofaunal observations from Virginia's Eastern Shore should be recorded in field notes and made available to the scientific community. On 11 June 2001 at 0800 h, we found a female *Chrysemys p. picta* sitting on a freshly dug nest cavity containing eggs. The turtle was examined briefly and returned to its position over the cavity, at which time we left the area. When we returned at 0845 h, the nest was covered and the female gone.

The nest was discovered in a wiregrass lawn approximately 15 m from the edge of Onancock Creek (Southern Branch), a brackish tidal creek. It was dug in hard soil on a SE facing slope (approximately 25° from horizontal) that receives full sun until late afternoon. The weather was clear and sunny with a daily mean temperature of 23.5° C (Accomack County Airport, Melfa, VA).

At 1315 h that afternoon, we carefully excavated the nest and measured all eggs with dial calipers. Six elliptical, flexible, cream-colored eggs were discovered. They averaged (mean ± 1 SD) 30.1 ± 0.9 mm (29.2-31.4 mm) in length and 17.7 ± 0.3 mm (17.3-18.1 mm) in width. The bottom egg was found at a depth of approximately 10 cm. Once measured, the eggs were returned to the cavity as found and the nest was recovered. The nest was monitored daily over the next 10 months to watch for the emergence of hatchlings.

On the morning of 16 April 2002, 309 days after the eggs were laid, four *C. p. picta* hatchlings were found emerging from the nest. The hatchlings had round black shells and large yellow spots behind each eye. Mean carapace length for three of the hatchlings was 29.3 ± 1.4 mm (28.5-31.0 mm). The weather was clear and sunny with a daily mean temperature of 25.5° C. A warming trend was apparent in the area, with mean temperatures rising 12° C over the previous week (Accomack County Airport, Melfa, VA).

Nesting on nearby Chincoteague and Assateague Islands occurs from mid-May through mid-July. During this time, females deposit two to ten eggs (mean size = 30.3 ± 1.3 mm X 17.4 ± 0.9 mm) in a flask-shaped nest and may lay up to three clutches per year (Mitchell, J. C. 1994. The Reptiles of Virginia. Smithsonian Institution Press, Washington, D.C., 352 pp.; Mitchell, J. C., and J. M. Anderson. 1994. Amphibians and Reptiles of Assateague and Chincoteague Islands. Virginia Museum of Natural History Special Publication 2, Martinsville, VA. 120 pp.). Incubation typically lasts 65-80 days, but hatchlings (mean CL = 26.1 ± 1.7 mm) often overwinter in the nest and emerge during warm April rains (Mitchell, op. cit.; Mitchell and Anderson, op. cit.).

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***Thamnophis sirtalis sirtalis* (Eastern Gartersnake).** VA: Gloucester Co., 1817 Azalea Point Road, 37° 15.614 N, 76° 29.002 W. 26 January 2003. Kory L. E. Steele and Leslie Bowie.

Two *Thamnophis sirtalis sirtalis* were found hibernating in a buried plastic water meter box measuring 40 x 27.5 x 37 cm, 1 m from a paved residential road. The box protruded a maximum of 5.6 cm above the ground surface The lid of the box had a finger hole 1.4 x 1.6 cm, serving as a possible point of entry. These snakes remained in the box until 5 April 2003.

The largest of the snakes was 51.0 cm SVL with a truncated tail 6.8 cm long, and weighed 68.5 g. The smaller snake was 43.5 cm SVL, and weighed 41.5 g. At the time of data collection (1230 h on 26 January), the air temperature outside of the water meter box was 6.1 C, and the temperature inside the box where the snakes were found was 3.9 C.

There was also an oval hole leading to an underground cavity outside of the water meter box on one side at the bottom where the water pipe entered the box with an opening measuring 5 x 1.5 cm. Upon being returned to the box, the snakes retreated into the cavity. No determination of the size or insulative properties of the cavity was made because accessing the cavity would have required excavation and destruction.

There is no mention of garter snake hibernacula in Mitchell (1994. The Reptiles of Virginia. Smithsonian Institution Press, Washington, DC. 352 pp.). These observations may be of interest because of the snakes' utilization of a man-made object for a hibernaculum, which has been reported in Gillingham and Carpenter (1978. Snake hibernation: Construction of and observations on a man-made hibernaculum. Journal of Herpetology. 12: 495-498.). It is likely the water meter box made an ideal hibernaculum because the water pipes running through the box were deep enough to prevent freezing and would have stayed at a relatively constant temperature, protecting the snakes from freezing.

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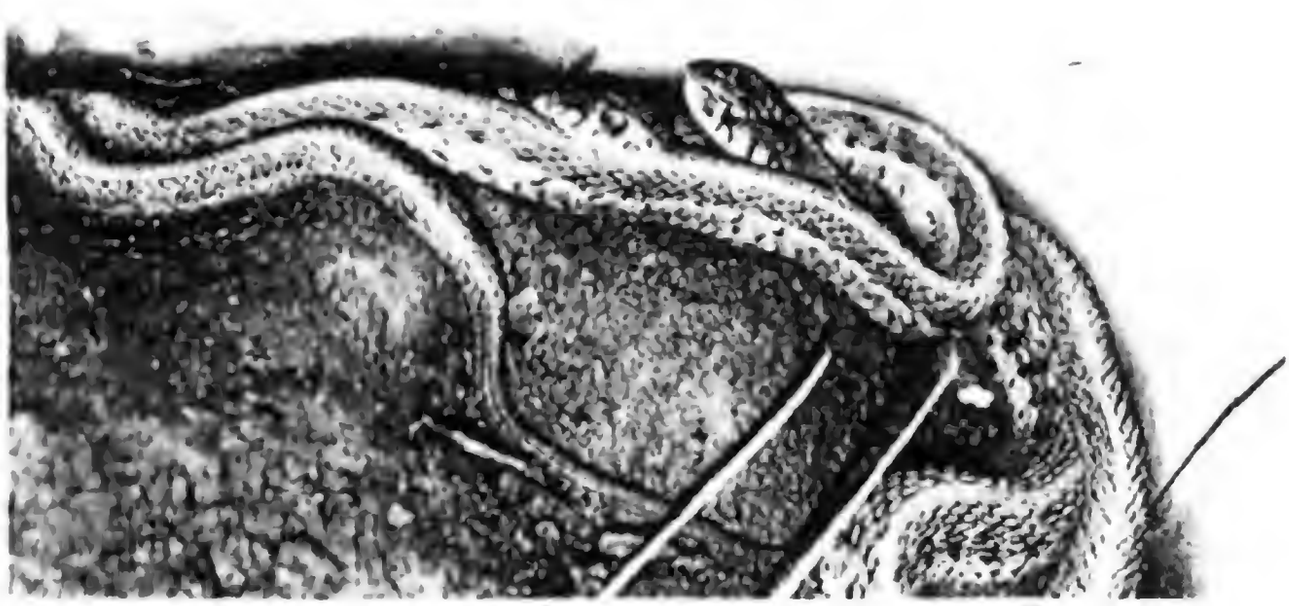

Hibernating eastern gartersnakes (*Thamnophis s. sirtalis*) in water meter box.

***Storeria dekayi dekayi* (Northern Brown Snake).** VA: Botetourt Co., Solitude Swamp, Jefferson National Forest, 2 km NE Arcadia. 21 March 2003. William J. Hunley.

While participating in a Community Middle School field trip in search of breeding anurans, one of my students found a Northern Brown Snake basking on a mound of soil near Solitude Swamp, a forested wetland in the Glenwood Ranger District of the Jefferson National Forest. I examined and photographed the specimen before releasing it at the capture site. Two voucher photographs have been deposited in the Virginia Herpetological Society archives. According to distribution records provided by Mitchell (1994. The Reptiles of Virginia. Smithsonian Institution Press, Washington, DC. 352 pp.), Mitchell and Reay (1999. Atlas of Amphibians and Reptiles in Virginia. Virginia Department of Game and Inland Fisheries, Special Publication No. 1, Richmond, VA. 122 pp.), and Hoffman (1986. The herpetofauna of Alleghany County, Virginia, Part 3. Class Reptilia. Catesbeiana 6(1): 4-10), this is the first record of this species for Botetourt County, and only the sixth record for Virginia west of the Blue Ridge.

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***Cnemidophorus* (= *Aspidoscelis*) *sexlineatus* (Six-lined Racerunner).** VA: City of Suffolk, South Quay pine barrens, ca. 10.5 km SSE Franklin, 4 April 2003. Anne C. Chazal, Kimberly M. Cousins and Steven M. Roble.

On the afternoon of 4 April 2003, we encountered an adult male racerunner in a small patch of open sand at the South Quay pine barrens. Skies were clear and the air temperature was approximately 26 C (79 F). The lizard was resting in a shaded portion of the sand patch. It remained motionless, except for subtle head and eye movements, for about 5 min after its discovery, allowing for close observation and photography. Subsequently, the lizard was startled by one of our movements and ran rapidly, in typical racerunner fashion, into nearby cover.

According to Mitchell (1994. The Reptiles of Virginia. Smithsonian Institution Press, Washington, DC. 352 pp.) and Mitchell and Reay (1999. Atlas of Amphibians and Reptiles in Virginia. Virginia Department of Game and Inland Fisheries, Special Publication No. 1, Richmond, VA. 122 pp.), this is only the second documented locality for racerunners in the City of Suffolk (formerly Nansemond County). Mitchell (op. cit.) reported that the earliest recorded observation of racerunners in Virginia was 30 April. Our record is thus a new early activity date for this species in the state. Palmer and Braswell (1995. Reptiles of North Carolina. University of North Carolina Press, Chapel Hill, NC. 412 pp.) noted that racerunners are typically the last species of lizard to emerge from hibernation in North Carolina, where the earliest known activity date is 3 March.

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Six-lined Racerunner (*Cnemidophorus sexlineatus*) photographed by S. M. Roble at South Quay pine barrens on 4 April 2003.

***Ambystoma maculatum* (Spotted Salamander).** VA: Pittsylvania Co., White Oak Mountain Wildlife Management Area. 9 March 2003. Jason D. Gibson.

The spotted salamander is wide-ranging in the Commonwealth but many counties in southside Virginia are lacking vouchered records. On the morning of 9 March 2003, I surveyed a series of vernal pools for spotted salamander egg masses. A log flipped beside the margin of one vernal pool (25.6 m long, 11.9 m wide, and 21.9 cm deep) yielded one adult salamander. This male measured 17.4 cm total length and 9.5 cm snout-vent length. It had 35 dorsal spots and 9 leg spots; the dorsal spots were asymmetrically arranged. The pool was located in a mature forest with *Liquidambar styraciflua* (sweetgum), *Quercus phellos* (willow oak), and *Acer rubrum* (red maple) being the predominant tree species. One spotted salamander egg mass and numerous *Ambystoma opacum* (marbled salamander) larvae were found in the pool. Male *Pseudacris feriarum* (upland chorus frog) were calling from other vernal wetlands close by. This is the first vouchered record for this species from Pittsylvania County (Mitchell, J. C. and K. K. Reay. 1999. Atlas of Amphibians and Reptiles in Virginia. Virginia Department of Game and Inland Fisheries, Special Publication No. 1, Richmond Virginia. 122 pp.). A color slide will be deposited in the Virginia Museum of Natural History.

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***Pseudacris feriarum* (Upland Chorus Frog).** VA: Pittsylvania Co., White Oak Mountain Wildlife Management Area. 15 March 2003. Jason D. Gibson and Gary Greene.

On 15 March 2003 at 2000 h, a single male upland chorus frog (SVL 27 mm) was captured in a small roadside ditch. It was actively calling under a pile of sticks while half submerged in water. This is the first vouchered record for this species from Pittsylvania County (Mitchell, J.C. and K. K. Reay. 1999. Atlas of Amphibians and Reptiles in Virginia. Virginia Department of Game and Inland Fisheries, Special Publication No. 1,

Richmond Virginia. 122 pp.). A color slide will be deposited in the Virginia Museum of Natural History. Records for *Pseudacris feriarum* are almost non-existent for southside Virginia. This probably reflects a sampling deficiency in this area. I have personally observed many breeding choruses of this species in both the city of Danville and in Pittsylvania County. The defined distribution of this species in all southern counties of Virginia would be a nice addition to our knowledge of this anuran in our state.

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***Pseudacris feriarum* (Upland Chorus Frog).** VA: Greensville Co., ca. 0.3 km SW Co. Rt. 301 bridge over Fontaine Creek, 1.5 km N of North Carolina state line. 6 September 2002. Steven M. Roble.

An adult upland chorus frog was collected in vegetation near the edge of a private gravel road within 50 m of a swamp. This is the first vouchered record for this species from Greensville County and the southernmost Virginia locality according to Mitchell and Reay (1999. Atlas of Amphibians and Reptiles in Virginia. Virginia Department of Game and Inland Fisheries, Special Publication No. 1, Richmond Virginia. 122 pp.). Tobey (1985. Virginia's Amphibians and Reptiles, a Distributional Survey. Virginia Herpetological Society, Purcellville, VA. 114 pp.) also lacked records of *P. feriarum* for this county, but Hoffman and Mitchell (1996. Records of anurans from Greensville County, Virginia. Banisteria 8: 29-36) reported that the species was occasionally "heard along every road in the southeastern third of the county." No specific locality records were provided by Hoffman and Mitchell (op. cit.), and evidently, no specimens were obtained by these authors. The specimen will be deposited in the Virginia Museum of Natural History.

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***Bufo americanus* (American Toad).** VA: Prince William Co., Occoquan Forest, 1.5 km N Co. Rt.663 bridge over Occoquan Creek. 27 March to 4 April 2003. William M. Johnson.

A mating pair of *Bufo americanus* was observed in a constant state of amplexus during the period from 27 March through 3 April 2003. Observations were made from 0600 to 0900 h and again from 1600 to 2100 h each day. Mating occurred in a small (4 m^2, 30 cm deep) pond constructed in our front yard. Their endurance was remarkable not only for the time duration but also the subfreezing temperatures endured. Air temperatures for the locality ranged from lows of –3 to 10 C (26.6 to 50.0 F) to highs of 7 to 28 C (44.6 to 82.4 F). For several of the coldest days (30 and 31 March) they were observed resting, yet still coupled, on a rock out of the water even during light snow. Reproduction was apparently successful because eggs were eventually laid and tadpoles have since emerged.

American toads typically mate for only a few hours, but members of the neotropical toad genus *Atelopus* have been documented to remain in amplexus for periods ranging from 20-125 days (Duellman and Trueb. 1986. Biology of Amphibians. McGraw-Hill Book Company, New York, NY. 670 pp.).

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***Rana sphenocephala* (Southern Leopard Frog).** VA: Sussex Co., Chub Sandhill Natural Area Preserve, ca. 9 km SSW Homeville. 16 October 2002. Steven Roble, Anne Chazal, Christopher Hobson, Braven Beaty, Gwynn Crichton, Judy Dunscomb, Tim San Jule, Ryan Smith, Brian van Eerden, et al.

On the afternoon of 16 October 2002, the Chub Sandhill Natural Area Preserve was visited briefly by various staff of the Virginia Department of Conservation and Recreation, Division of Natural Heritage, and the Virginia field office of The Nature Conservancy. This visit resulted in the discovery of one leopard frog egg mass in shallow water near the

shoreline of an old, man-made sandpit pond (borrow pit); the pond was not searched thoroughly for additional egg masses. The egg mass appeared to be relatively fresh and many embryos were nearing the hatching stage. I estimated that the egg mass was less than a week old. Wright and Wright (1932. Life-histories of the Frogs of Okefinokee Swamp, Georgia. The Macmillan Company, New York. 496 pp.) reported that eggs of this species can hatch in 3-5 days, whereas Martof et al. (1980. Amphibians and Reptiles of the Carolinas and Virginia. The University of North Carolina Press, Chapel Hill, NC. 264 pp.) indicated a period of 1-2 weeks.

Conant and Collins (1998. A Field Guide to Reptiles and Amphibians of Eastern and Central North America. Third edition, expanded. Houghton Mifflin Company, Boston, MA. 616 pp.) stated that the southern leopard frog breeds in the early spring in the northern portion of its range, whereas southern populations may breed in any month of the year. Virginia falls within the northern portion of the range of this species. Wright and Wright (1949. Handbook of Frogs and Toads of the United States and Canada. Third edition. Comstock Publishing Associates, Cornell University Press, Ithaca, NY. 640 pp.) cited a breeding period of February to December, with most activity occurring from April to August. Populations in Alabama and Louisiana breed mostly from December to February and March, but can breed any time of the year after warm (>10 C), heavy rains (Mount, R. H. 1975. The Reptiles and Amphibians of Alabama. Auburn University Agricultural Experiment Station, Auburn, AL. 345 pp.; Dundee, H. A., and D. A. Rossman. 1989. The Amphibians and Reptiles of Louisiana. Louisiana State University Press, Baton Rouge, LA. 300 pp.). Caldwell (1986. Selection of egg deposition sites: a seasonal shift in the southern leopard frog, *Rana sphenocephala*. Copeia 1986:249-253) reported that this species has two primary breeding seasons in South Carolina (winter: November to February or March; fall: September or October). The breeding period of *R. sphenocephala* populations in Texas varies depending on whether they are allopatric or sympatric with *Rana berlandieri* (Rio Grande leopard frog) and *R. blairi* (Plains leopard frog)(Hillis, D. M. 1981. Premating isolating mechanisms among three species of the *Rana pipiens* complex in Texas and southern Oklahoma. Copeia 1981:312-319). Breeding in sympatric populations (central Texas) is limited to spring (primarily February and March), whereas allopatric populations (east Texas) have spring (January to early

May, but mostly February to April) and fall (mostly October) breeding seasons. Leopard frogs in Maryland and Delaware breed from late February and early March through late June (Lee, D. S. 1973. Seasonal breeding distributions for selected Maryland and Delaware amphibians. Bulletin of the Maryland Herpetological Society 9: 101-104). Lee (op. cit) also mentioned autumn calling records for these states but indicated that he lacked evidence of confirmed breeding by leopard frogs during this period.

There are few published records of breeding dates for *R. sphenocephala* in Virginia, although it is generally well-known that most breeding occurs in the late winter and spring months. Martof et al. (op. cit.) reported that southern leopard frogs in the region encompassed by the Carolinas and Virginia usually breed in the winter or early spring months, but occasionally in the fall. Specific dates for Virginia were not provided by these authors. Mitchell (1975. Frogs and toads of Virginia. Virginia Wildlife 36(4): 13-15, 24, 27) stated that the breeding season of leopard frogs in Virginia extends from April to June. In a subsequent, two-year study in Chesterfield County, Mitchell (1986. Life history patterns in a central Virginia frog community. Virginia Journal of Science 37: 262-271) determined that calling and egg-laying in a population of *R. sphenocephala* extended from 1 March to 15 April, with additional breeding from 1-23 September, in 1979, and from 22 February to 7 April in 1980.

Caldwell (op. cit.) reported that the egg masses of South Carolina populations of *R. sphenocephala* are laid communally during the winter season but singly (isolated) during the fall season. Spring-breeding leopard frogs in Virginia also deposit their eggs communally (pers. obs.). Mitchell (1986, op. cit.) did not discuss the egg deposition patterns of the spring- and fall-breeding leopard frogs at his study site in Chesterfield County. The single egg mass found at Chub Sandhill Natural Area Preserve in mid-October suggests that Virginia populations also shift from communal to isolated egg deposition patterns, but more (published) observations are needed. Whether or not the same females breed during the spring and fall reproductive events remains to be determined through careful study (i.e., mark-recapture methods).

The summer and early fall of 2002 was characterized by a severe drought throughout most of Virginia, resulting in water-use restrictions for residents. Mid-late fall rains partly alleviated the problem and produced some unusual phenological events such as certain plants blooming out of season. These rains presumably also stimulated the October breeding event by leopard frogs at Chub Sandhill Natural Area Preserve. To my knowledge, this is the latest documented breeding occurrence by *R. sphenocephala* in Virginia.

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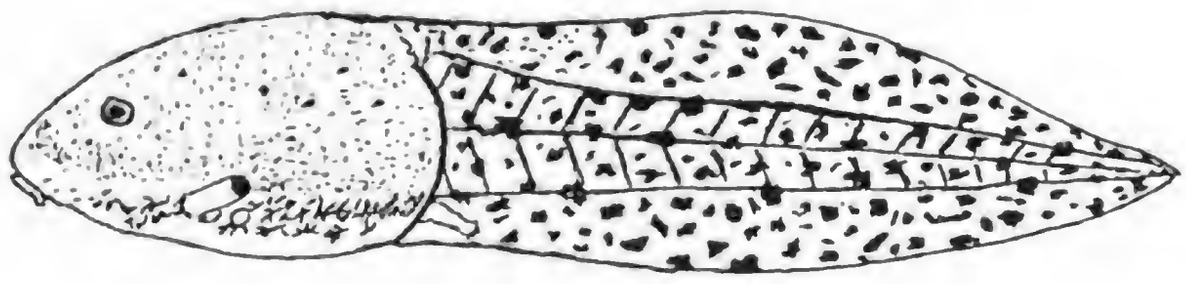
Errata

The salamander in the photograph on page 48 of *Catesbeiana* 22(2) was incorrectly labelled as a long-tailed salamander (*Eurycea longicauda*). The correct identification is cave salamander (*Eurycea lucifuga*).

On page 51 of the same issue, the body length of the adult eastern kingsnake (*Lampropeltus getula getula*) from Patrick County should have been reported as 111.4 cm (not 11.4 cm).



Green frog (*Rana clamitans*) tadpole. Drawing by Jason Gibson.

President's Corner

The fall symposium was excellent in my opinion. The meeting, which was composed of a teacher workshop, a symposium with six speakers, and a competitive silent auction, had a large turnout of people. We only had one technical problem, an overhead projector, but Steve Roble was able to overcome this difficulty. I would like to thank all the people who participated in this symposium including: Steve Roble, Lori Williams, Mike Hayslett, Dawn Kirk, Fred Huber, and Donald Mackler. Special thanks also go to Mike Pinder, Mike Hayslett, and John White for helping with the teacher workshop.

I would like to discuss briefly my excitement about the herping opportunities this spring in the state of Virginia. On May 17-18, 2003, the second annual Virginia Bioblitz is scheduled for Douthat State Park in Bath County. This is a 36-hour survey, which has as a goal to document as many of the species of plants, animals, and fungi that inhabit the park as possible. Last year's Bioblitz event at Pocahontas State Park brought out approximately 100 volunteers and tallied 1,377 species. For more information, visit the Virginia Natural History Society's website: http://fwie.fw.vt.edu/vnhs/. The Virginia Herpetological Society's collecting trip will occur on May 30-31 and June 1. We will be meeting in Greensville County. There are many opportunities for both people who prefer to collect amphibians and for those who prefer reptiles. Specifically, John White and I have as a goal to add the banded water snake (*Nerodia fasciata*) to the herpetofauna of Virginia. It is found in northern North Carolina adjacent to Greensville County. The water moccasin (*Agkistrodon piscivorus*) is also found in northern North Carolina and would represent a southwestern expansion of its Virginia range if found during this survey. In 1728, William Byrd found the timber rattlesnake in this county, so I guess many surprises are possible. With regard to amphibians, Greensville County may be the county with the most species of anurans in Virginia. If the weather is right it is possible to find 17 species. There are also many turtle, lizard, and salamander species that inhabit this area. A word to the wise in regards to this survey: the mosquitoes are hungry and the swamps are full. Be prepared for both. For anyone who has a canoe please bring it. Fountain (= Fontaine) Creek looks like a great herping place, but can only be surveyed by canoe. There are other possible sites that can only be surveyed by canoe or chest waders as well. Please bring dipnets, snake hooks, boots, flashlights, food,

turtle traps, seine nets, and any other collecting gear that you think would be helpful. A landowner has offered land for VHS members to camp on. A hunting cabin will serve as our Friday meeting place, please bring a lawn chair to sit in. Please email me if you have questions regarding camping or this survey (frogman31@earthlink.net). I am very excited about this survey. It is the last one that I am directly organizing so I hope that you will support the effort of John White and myself.

Jason Gibson
VHS President

Treasurer's Report, April 2003

Previous Checking Balance August 2002	**$3893.74**
Receipts:	
October Dues	$ 241.00
November Dues	$ 123.00
December Dues	$ 356.00
January Dues	$ 728.00
February Dues	$ 153.00
March Dues	$ 95.00
T-Shirt Sales	$ 497.50
Fall Meeting Silent Auction	$ 163.00
Fall Meeting Teacher Workshop	$ 60.00
Total Receipts	$2396.50
Disbursements:	
Catesbeiana 22(2)	$ 523.00
Newsletter 13(1)	$ 135.49
T-Shirt production	$ 434.95
Dues Reminder Post Cards	$ 43.03
Virginia Bioblitz Donation	$ 250.00
Total Disbursements	$1460.52
Balance on Hand April, 2003	
Checking	$4829.72

Virginia Herpetological Society Minutes
Fall 2002 Meeting, October 12, 2002
Holiday Lake 4-H Educational Center

Jason Gibson opened the meeting and asked for reports. Paul Sattler stated that the minutes of the Spring 2002 meeting in Wythe County had been published in *Catesbeiana* 22(2). The Treasurer's Report was also published in the same issue. The balance in the checking account in early October was about $3988.00. With the addition of $95 in dues sent in since then, and paying the printing and mailing costs of *Catesbeiana* 22(2), the balance to date was $3465.74. Steve Roble reported that 180 copies of *Catesbeiana* 22(2) cost $395.09 to print and mailing costs were $127.91, for a total of $523.00. Shelly Miller requested via email that an effort to check the email addresses of members be made at the meeting to insure that those sent via electronic mode were arriving safely. John White reported that Kory Steele had suggested that multiple photographs of herps be posted on the Web Site to show age and geographic variation. Don Mackler suggested that some text accompany the photos to explain what type of variation was being exhibited. Both suggestions were widely supported by comments from the floor. John stated that he could scan both photographs and slides if members had good examples they wanted to send in. Check with John at the web site address (http://fwie.fw.vt.edu/VHS/) if you would like to donate some pictures for this project.

Jason Gibson explained some of the recent expenditures of the Society. We donated $200 to a legislative field trip after a request by the VADGIF, to promote environmental awareness among state legislative staff. The Snake brochure was distributed to those in attendance, citing the VHS financial support, and Don Schwab (of the VHS and VADGIF) was one of the speakers. The VHS also donated $100 to the Luray Zoo to sponsor a reptile. The VHS logo will appear on the timber rattlesnake exhibit, just inside the zoo entrance to acknowledge our support. An educational sign was approved at the Spring meeting to describe the reptiles present at a new wetlands park in Patrick County. All of these expenditures are in keeping with our mandate of educating the public on the importance of amphibians and reptiles to ecosystems within Virginia.

Jason discussed the problem raised by Steve Roble, who had pointed out that 27% of *Catesbeiana* 22(2) was mailed to individuals who were technically no longer members. Memberships expire June 30th of the year

after dues are not renewed. Many members are not paying dues until well into the second half of the year. After some discussion, Paul Sattler said that he could send a postcard in early July to individuals who have not renewed memberships, encouraging them to not miss the additional publications coming out later in the year. A postcard in December has been used in the past to encourage individuals to renew their memberships on a calendar basis. This strategy will be implemented for 2003.

Jason discussed a further problem raised by Steve Roble concerning *Catesbeiana.* Steve pointed out that he has written 5 of the last 14 major articles in *Catesbeiana.* Half of the articles are written by officers of the VHS. Furthermore, most of the field notes are contributed by Steve, other Heritage Staff, or VADGIF staff. Steve mentioned that it was becoming increasingly hard to publish and write for the journal. He has been editor for more than 4 years, and that it was about time to hand the job off to someone else. Of the options outlined, there was support to (1) form a committee to help solicit field notes and articles, and failing this to (2) reduce *Catesbeiana* to one issue per year. *Catesbeiana* would publish the results of the Spring survey, and the Newsletter could publish field notes and announcements on meetings. If the journal is reduced to one issue, there would be a cost savings, but a loss of information. Don Mackler and Mike Clifford volunteered to serve on this committee.

Jason next presented an idea from a member for the VHS to host an amphibian breeding database. Salamander movements and anuran calling dates could be posted to track latitudinal and elevation differences in breeding seasons. There was considerable discussion on what criteria would be required to log an entry and where the data would be housed. A committee consisting of Jason Gibson, Paul Sattler, Bill Hunley, and Mike Clifford was established to draft a proposal for the next meeting.

The site for the 2003 Spring Survey was discussed. Jason proposed a site in Greensville County. Between private and hunting club lands made available there are about 1000 acres to survey. It is a potential site to find a new species for Virginia, *Nerodia f. fasciata*, the banded watersnake. This species is found just over the North Carolina border. Other species of interest include the oak toad, spotted turtle, many-lined salamander, slender glass lizard, cottonmouth, dwarf mudpuppy, and the greater and

lesser sirens. There is canoe access to Fountain (= Fontaine) Swamp, and a hunting club would provide housing at no cost. The offer to survey Richard Bland College is still available, but the majority of members expressed interest in returning to Southeastern Virginia.

Jason expressed concern that next Fall, the three officers, and potentially the editor of *Catesbeiana* may all have to be replaced. This represents virtually the entire leadership of the VHS. Jason would like to have nominations available prior to this so that biographies can be prepared and included in either the newsletter or on the web site. Members were asked to thoughtfully consider expanding their role in the society to possibly include a term as an officer. Jason will coordinate the nomination process.

The Lake Monticello Garden and Wildlife Club has asked for a speaker. Meetings are held the third Thursday of each month, and a speaker for February, March or April is wanted. Members in Richmond, where the Club meets, are asked to contact Jason Gibson if willing to participate.

Special thanks were given to John White, Mike Hayslett, and Mike Pinder for helping coordinate the Teacher Educational Workshop this year. Liberty University was suggested as a host site for the Fall 2003 meeting, being centrally located within the Commonwealth. Mike Clifford volunteered to teach a GPS workshop in the Fall for VHS members. This would occur opposite the Teacher Educational Workshop, which members do not generally attend.

The meeting was dismissed for lunch and was followed by the *Ambystoma* symposium and silent auction. The Society for the Study of Amphibians and Reptiles, John White, and Mike Pinder graciously provided materials for the silent auction.

Paul Sattler
Secretary/Treasurer

Dues Reminder

Check the date on your mailing label to determine the year through which you have paid dues. **Please renew now if the date shown is 2002**. See the last page of this bulletin for the membership application/renewal form. Save postage by paying your dues at the Spring Meeting.

ANNOUNCEMENT
SPRING 2003 MEETING
VIRGINIA HERPETOLOGICAL SOCIETY

This year we will be surveying thousands of acres in Greensville County. There are 4 tracts of land that we have access to, which include 600 acres of privately-owned agricultural and woodland and 8,000 acres of International Paper landholdings. All of the land is found in a region that locals call the "low grounds". Much of the land is riverine forest and flooded swamp but there are portions of high land as well. Since all of the sites we are visiting will be on private land, attendance at the organizational meetings on Saturday and Sunday morning is necessary.

Schedule:

Friday May 30

7:00 PM	Business meeting (Gibson hunting cabin) Slide show of potential species. Preliminary coordination of Saturday survey
8:00 PM	Coordinate night hike and/or road survey

Saturday May 31

8:00 AM	Meet at Gibson hunting cabin
8:30 AM	Break into survey groups and travel to designated survey locations
5:30 PM	Return to Gibson hunting cabin to compile survey reports and photograph collected specimens.

Sunday June 1

8:00 AM	Meet at Gibson hunting cabin for additional surveys

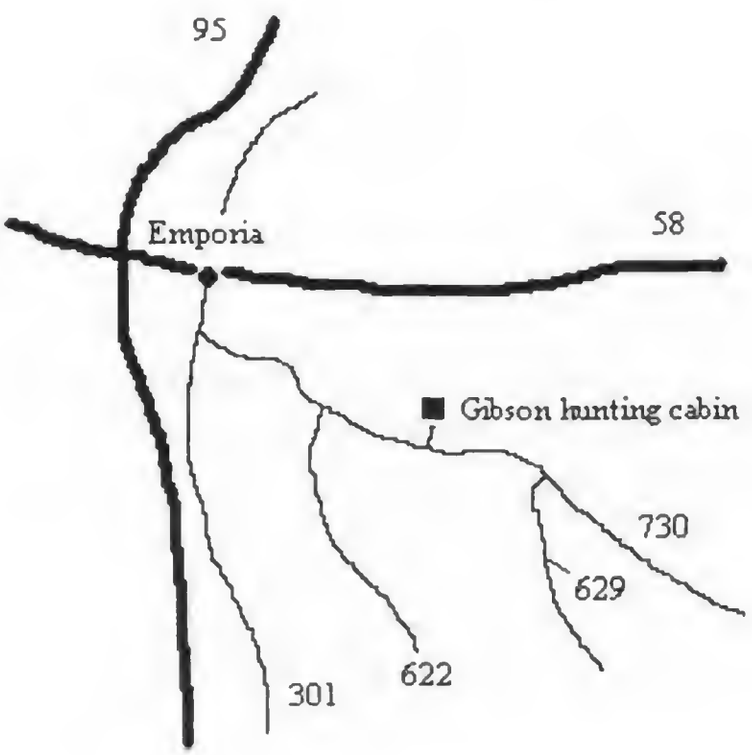
For more information, maps, accommodations, and updates please visit the VHS website:

http://fwie.fw.vt.edu/VHS/2003_spring_meeting.htm

Directions to Gibson hunting cabin

From US Route 58 west and east: take Interstate 95 south exit in Emporia. Travel 2.7 miles and turn right onto exit 8 (Route 301). At the stop sign turn left onto north 301. Travel 0.9 miles and turn right at the first stop light onto Low Ground Road (Route 730). Travel 2.6 miles and turn left onto dirt road (a VHS sign will be placed where you should turn). Follow dirt road to white hunting cabin.

From Interstate 95: While traveling on 95 south, take exit 8 (Route 301) 2.7 miles after passing the city of Emporia. At the stop sign turn left onto north 301. Travel 0.9 miles and turn right at the first stop light onto Low Ground Road (Route 730). Travel 2.6 miles and turn left onto dirt road (a VHS sign will be placed where you should turn). Follow dirt road to white hunting cabin.



MEMBERSHIP APPLICATION

I wish to _____ initiate _____ renew membership in the Virginia Herpetological Society for the year _____ 2003 _____ 2004 _____ 2005.

Name _____

Address _____

_____

_____ Phone _____

email address: _____

Dues Category: ____ Regular ($15.00)
____ Family ($20.00)
____ Under 18 ($8.00)
____ Life ($225.00)

Interests: ____ Amphibians ____ Reptiles
____ Distribution ____ Research
____Captive Husbandry
___ Specifically _____

Make checks payable to the Virginia Herpetological Society and send to: Dr. Paul Sattler, VHS Secretary/Treasurer, Department of Biology, Liberty University, 1971 University Blvd., Lynchburg, VA 24502

Visit the VHS web site at: http://fwie.fw.vt.edu/VHS/

Field Notes

This section provides a means of publishing natural history information on Virginia's amphibians and reptiles that does not lend itself to full-length articles. Observations on geographic distribution, ecology, reproduction, phenology, behavior, and other topics are welcomed. Field Notes will usually concern a single species. The format of the reports is: Scientific name (followed by common name in parentheses), state abbreviation (VA), county and location, date(s) of observation, observer(s), data, and observations. The name(s) and address(es) of the author(s) should appear one line below the report. Consult the editor if your information does not readily fit this format. ALL FIELD NOTES MUST INCLUDE A BRIEF STATEMENT EXPLAINING THE SIGNIFICANCE OF THE RECORD (e.g., new county record) OR OBSERVATION (e.g., unusual or rarely observed behavior, extremely early or late seasonal record, abnormal coloration, etc.). Submissions that fail to include this information are subject to rejection. Relevant literature should be cited in the body of the text (see Field Notes in this issue for proper format). All submissions will be reviewed by the editor (and one other person if deemed necessary) and revised as needed; all changes must be approved by the author(s) before publication.

If the field note contains information on a new county (or state) record, verification is REQUIRED in the form of a voucher specimen deposited in a permanent museum (e.g., Virginia Museum of Natural History) or a color photograph (print or slide) deposited in the archives of the Virginia Herpetological Society. Photographs should be sent to the editor for verification and archiving purposes; the identity of voucher specimens must be confirmed by a museum curator or other qualified person. Include the specimen number if it has been catalogued. Prospective authors of distribution reports should consult Mitchell and Reay (1999. *Atlas of Amphibians and Reptiles in Virginia*), Mitchell (1994. *The Reptiles of Virginia*), Tobey (1985. *Virginia's Amphibians and Reptiles: A Distributional Survey*) and other recent literature to determine if they may have a new county record. Species identification for observational records (e.g., behavior) should be verified by a second person whenever possible.

The correct citation format is: Tobey, F. J. 1989. Field notes: *Coluber constrictor constrictor. Catesbeiana* 9(2): 35.

Photographs

High contrast black-and-white photographs of amphibians and reptiles will be considered for publication if they are of good quality and are relevant to an accompanying article or field note. Submissions should be no larger than 5 x 7 inches and printed on glossy paper. Published photographs will be deposited in the archives of the Virginia Herpetological Society.